

White Paper

From our vantage point as a technology supplier to the telecommunications industry, NYNEX's business objectives today closely track with those of other Regional Bell Operating Companies (RBOCs) and can be summarized as follows:

- Protection of base or core revenue streams.
- Revenue generation through the selective introduction of new products and services.
- Expense reduction through the streamlining of operations.

As it has been universally chronicled, the RBOCs as a group have had mixed success in meeting these objectives during the past few years. In an attempt to capitalize on the rapidly changing telecommunications market, the RBOCs explored and invested in many non-traditional markets such as computers, CPE, real estate, etc., much to the detriment of some of their traditional telecommunications businesses.

As 1993 approaches, the opportunities of the changing telecommunications market still exist; except that now it appears that most RBOCs have decided to leverage their strengths in areas closer to their core business; i.e., communications technology and Public networking.

To accomplish this, emerging telecommunication markets must be identified; investments in new technology must be made; costs must be lowered; regulatory challenges must be met; and ultimately, customers' communication needs must be satisfied.

This brings us to Public Communications and the payphone market. Before we begin to discuss this market, the issues, customer service needs, and opportunities for new services, including debit cards, it may be useful to start by mapping the objectives of NYNEX's Public Communications Division to those of the Corporation. Our understanding of the key objectives for this division are as follows:

- Protect existing Public paystation locations from COCOT incursions while selectively securing new locations.
- Introduce new products and services to paystation users that are profitable to NYNEX.
- Reduce or minimize expenses incurred from staffing, maintenance and other types of overhead.

In trying to meet these objectives, Public Communications must contend with a number of significant forces, external and internal, that exist today in the payphone marketplace. The following is a sampling and overview of the major forces:

EXTERNAL

Vandalism--New York Telephone spends approximately \$10 million annually repairing the city's 58,000 public payphones.¹ Most of this damage can be attributed to stripped handsets and coin box break-in attempts.

Fraud--In the U.S. it's called the billion dollar business. The biggest problem these days are professional calling card thieves who watch people punch in their card numbers. This problem is particularly bad in mid-town New York City and other travel locations. Primarily as a result of this, many experts recommend that, whenever possible, consumers should use public phones that have magnetic card readers.

Competition--Comes in several forms: Direct --through locations served by COPT or Private Payphone Provider and third party Operator Service Providers. Indirect -- intralata dial-a-round (10XXX) at NYNEX payphone locations. Competition from dial-a-round is not insignificant; a 20% dial-a-round on intralata payphone calls translates to an annual net loss of \$46 million to NYNEX. There are approximately 35,000 COPT telephones in the NYT territory, including those owned by AT&T. Emerging alternative technologies such as Cellular and PCN will have a significant impact on public payphone usage by siphoning off thousands of call transactions, particularly at high volume travel centers.

With this in mind, it is probably safe to conclude that the average annual number of call transactions from public paystations has leveled off and will start an uninterrupted decline.

Regulatory--MFJ, FCC, and the PSCs. Considering the problems of the fledgling COPT industry, the NYSPSC has shown a high tolerance level for their antics. On other political fronts, New York City DOT has recently submitted legislation for "authorizing franchises for public payphone installation ... on NYC property," allowing for private payphone competition with NYT.²

The regulatory topics *du jour* are: Sent-paid Equal Access, Billed Party Preference, 10XXX blocking (COPT line) and Per Call Compensation Accounting (COPT line). The question NYNEX must always answer is: How do we upgrade our network to meet various regulatory requirements for our coin-lines?

INTERNAL

Coin Collection--A fact of life for the telephone company. One executive at a major telco recently quipped, " We make a billion a year in coin revenues, and it costs us a billion and a half to collect!"

¹ "Flirting With a Coinless Pay Phone," New York Times, 2/16/92

² "Privates May Gain Opportunity in New York," Public Communications, 8/92

Switched Services--A problem faced by every RBOC. How do you cost effectively provide new features and services into the payphone market? Most RBOCs have concluded that it is simply not worth the expense to upgrade the network for offering "one off" coin-line services into a declining payphone market. This leaves them with the task of implementing expensive hardware and software network "patches" for Public Communication's coin-lines and COPT business lines on an "as needed" basis, usually as a response to Federal and State level regulatory mandates.

In dealing with this situation, RBOC Public Communication organizations are increasingly forced to look "outward" at the paystation itself as the source for adding new features and services. Of course COCOTs have been using these types of payphones, or "smartphones," for years now as a method of introducing new consumer services.

Paradoxically though, this latter approach runs counter to the RBOCs plans for centralizing intelligence "inward," from within the network and is also not without risk; these smartphones may exacerbate many of the same problems (i.e., vandalism, fraud and high maintenance costs) that they are currently trying to solve.

Let's now look at two different cross-sections of the payphone market, simplified, if only to make a few points (see Figure 1). The chart on the right shows the annual average revenues flowing through a public payphone, and is based on audited numbers from Peoples Telephone.³ Peoples is one of the largest COPTs with approximately 19,000 payphone locations in the U.S.

The chart on the left is our estimate of annual average revenues *collected* by LECs per payphone. This estimate is based on the audited numbers from Peoples Telephone, and is used for modeling purposes. A Peoples payphone generates approximately 80% of the transactions of a similar LEC payphone.

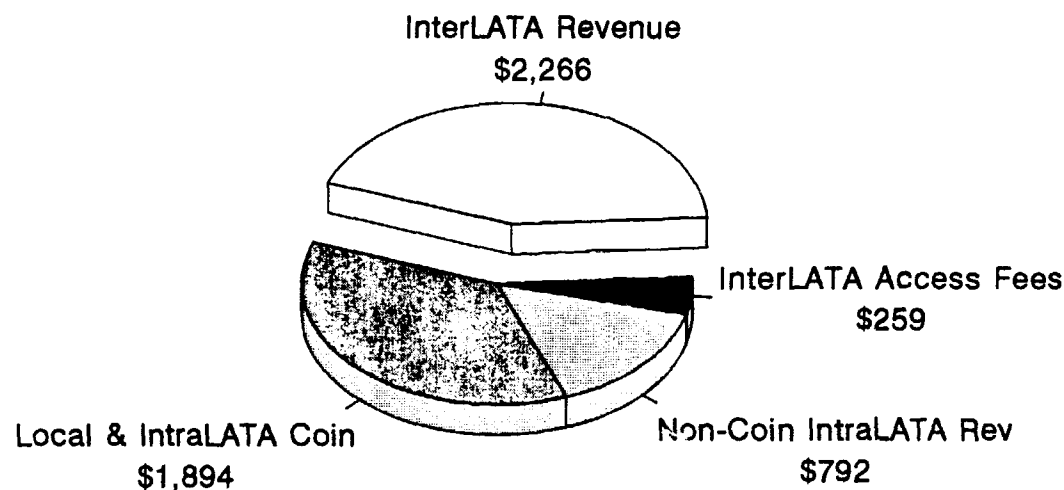
It is interesting to note that of the \$5,211 in revenues generated at this payphone, the LEC only collects \$2,945 or 59%. The other 41% or \$2,266 can be directly attributed to operator assisted and automated inter-lata calls, and revenue flows directly to the Interexchange Carriers. Of the \$2,945 LEC share, \$1,894 is made up of coin, or sent-paid calls.

However, a sizeable chunk (\$792) on the revenue side is made up of calling card intra-lata calls, which is fortunate because that is perhaps the most profitable part of the payphone revenue stream for most RBOCs. Unfortunately, as a result of intralata toll competition and dial-a-round from carriers such as AT&T, this revenue stream for many RBOCs is steadily declining, with no end in sight.

The question at this point is: What types of products and services can NYNEX offer to the payphone market that can squeeze more revenues out of these existing transactions?

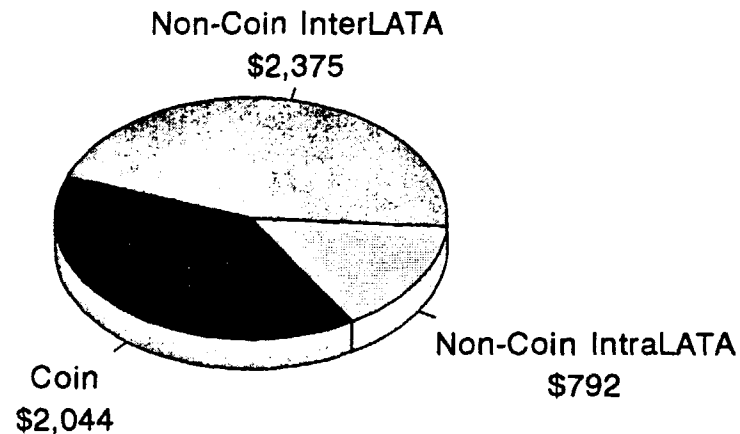
³ "1991 10K Report," Peoples Telephone

Total Revenue Per LEC Pay Telephone Profile



Revenue to LEC	\$2,945
Revenue to IXC/OSP	2,266
<hr/>	
Total Revenue	\$5,211

Total Revenue Per COPT Pay Telephone Profile



Revenue to COPT \$5,211

Figure 1

One possible approach is by trying to increase your revenues from existing payphone transactions. In theory, increasing your revenues per transaction (RPT's) at public paystations can be accomplished in a number of ways. One way is by offering paystation users new service features that leverage NYNEX's traditional strengths in the Public Switched Network.

For example, gateway services can be made available that allow callers the option of leaving a message on an uncompleted (busy/ring-no-answer) call attempt. Another way is by offering callers access to Information Service Providers. In each instance, NYNEX would generate additional revenues from the transaction by tariffing the basic service (i.e., gateway) and, in some instances, generating additional revenues from the enhanced service (message store & forward, rating, billing, etc.).

Increased revenues from existing transactions can also be generated by performing permitted exchange access services for Interexchange Carriers. These services would include signaling, rating, billing, supervision, switching or routing of an IXC call within the originating exchange area for delivery to an IXC point-of-presence.

One of the byproducts from increasing your RPT's is that there is essentially no overhead associated with these increased revenues. Unlike "subscriber services" which require large investments in marketing, technology, advertising and support, these new payphone revenues come from point-of-sale transactions that already exist in the marketplace. This concept is analogous to consumer point-of-sale purchases at retail "checkout counters."

We have formally categorized several basic, enhanced, gateway and access services that can be introduced into the payphone market that will quantitatively increase NYNEX's RPT's by approximately 43%. This translates to \$185M/year in aggregate new revenues from your public payphones. A description and financial analysis of the revenues generated and cost savings from these services is included in the attached Appendix.

Many of these services are not new. In fact some, like Message Delivery, have been in the marketplace since 1988. However, the big question becomes, "How does NYNEX introduce these and other new services to its payphone users in a manner that addresses the key issues as described above and meets your corporate objectives?"

[REDACTED]

NYNEX Public Communications is in the planning stages of introducing a "Change Card Phone" into the New York City marketplace on a widespread basis in 1993. As a prerequisite to implementation, New York Telephone is trialing debit card phones in the City. These phones are significantly different than "normal" 1C2

[REDACTED]

public payphones in that they accept only a prepaid "debit" card rather than coinage.

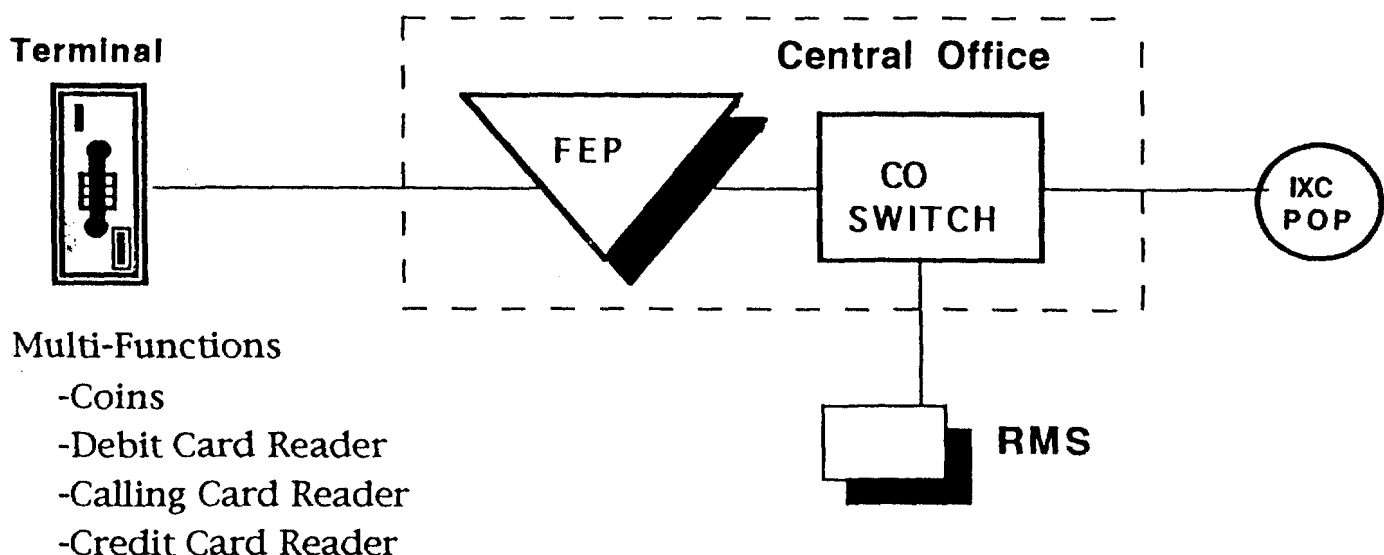
Our understanding of the objectives associated with the introduction of a Change Card terminal, gleaned from NYNEX and published reports is as follows:

- The project must be profitable, in addition to the following objectives;
- Reduce vandalism at public paystations
- Contribute to the elimination of toll fraud by limiting "walk-a-ways"
- Reduce overhead associated with coin collection

████████████████████ we carefully researched and analyzed the market and considered the technology and components that would be required to meet these objectives in light of the issues facing NYNEX today. Our conclusion was that the introduction of a "debit card" only public phone, despite its alluring potential to address many problems, is a high risk endeavor that may never meet the most critical objective of profitability.

While we believe this to be the case, we also assert that the introduction of a multi-function phone, able to accept coins, calling cards, credit cards, debit cards *and* allows other basic, enhanced and gateway services is a low risk approach to introducing a debit card to the market that enables NYNEX to meet its overall objectives, including profitability.

To implement this latter approach to the Change Card Project, we have recommended to NYNEX an architectural technology that incorporates a multi-fuction reader into a standard 1C2 paystation. As shown in the figure below, this paystation accepts calling, credit and debit cards in addition to coins.



Glossary to diagram:

Terminal -- Upper housing retrofit to existing payphone

FEP -- Front-End Processor (NYNEX) , aka APIS (Unisys), aka PGP (MessagePhone)

RMS -- Remote Management System

In addition, the payphone is connected to a front-end processor (FEP), which resides line-side in the Central Office, and a Remote Management System (RMS). The FEP/RMS is used as a platform for providing centralized basic, enhanced, gateway and access services to the Change Card Phone. [REDACTED]

How did we reach these conclusions? To answer that, let's first look at the debit card market today.

Although debit card only phones have been successfully introduced in Europe and Japan, the PTTs enjoy several marketing advantages over their U.S. counterparts. Monopoly control and a low usage of calling and credit cards are universally acknowledged as the key to PTTs successes in the debit card market. In most instances, monopoly control allows the PTT to remove coins from the market and introduce debit cards in a fashion analogous to "cold turkey."

Let's also look at the profiles of New York City consumers who may be potential NYNEX debit card customers. In a survey taken in May, 1992 of telephone users at the Staten Island Ferry Terminal in New York City, we compiled the following information:⁶

Profile 1: The "buy & try" user. This represented 14% of our sample who indicated that they have tried the debit card service or were planning to in the immediate future.

Profile 2: The "me too" user. This represented 53% of our survey sample who indicated that if "widely deployed and accepted", they too would use the debit card service.

Profile 3: The "will not use" crowd. These people represented 26% of our sample that indicated they would not use a change card and will continue to use coins or calling cards.

Other interesting observations: a surprising number of respondents who normally use a calling card nonetheless elected to use a debit card. The reason most frequently given is that "it is cheaper to make a local call with a debit card than with a calling card." Several coin users also expressed anger at the reduced number of coin phones in the terminal and felt the debit card was, "not worth the hassle."

⁶ "Change Card Customer Survey," Unisys Corporation, 5/92

It is from these surveys and other information gathered through secondary research that leads us to conclude that the implementation of a debit card only phone will cause a significant *decrease* in payphone revenues at these locations. We feel this result can be attributed to a combination of two key negative factors. These are:

- The Cold Turkey Approach. Coins currently account for 75% of all payphone transactions. The sudden elimination of coin phone locations will very likely cause a consumer backlash (ref: Cocoa-Cola Corporations introduction of "New Coke" and SONY Corporations attempt to dictate the market through the introduction of Beta).
- Competition. The introduction on a debit only phone will provide COPTs, including AT&T with an unprecedented opportunity to solidify their payphone base and attack existing NYNEX locations, particularly if the introduction gets off to a slow start or backfires.

To help evaluate the risks and potential benefits of each approach, let's consider the following alternatives and features:

Alternative 1-- Debit Card Phone

Accepts Debit Cards (no coin usage) Cost: \$\$

Alternative 2-- Multi-Media Card Phone

Accepts Debit, Credit and Calling Cards Cost: \$\$ Plus \$250
Accepts Coins
Proactive user prompts for:

- message delivery
- gateway to discount carriers
- gateway to information providers

Sent-Paid Equal Access
Billed Party Preference
Local, Toll Metering
Coin in Box Accounting
Instant Credit on wrong number
Conference Calling & Chain Dialing
Instant CDR on Coin Calls
Real-Time Diagnostics

To most, the additional benefits of Alternative 2 are apparent; for a small incremental cost, a line-sided intelligent platform can be incorporated into the project that will provide NYNEX with up to \$1,200 in additional annual revenues at each Change Card phone. The platform can also be software upgraded to meet current and future regulatory requirements in the payphone market, including Billed Party Preference.

But how does this alternative approach meet the other objectives, namely, the elimination of coins, vandalism and fraud? Doesn't this latter approach defeat the ultimate purpose of the idea behind a debit phone? Let's attempt to address these and other related issues:

Issue 1: Adding coin capability to a debit card phone defeats the purpose. Who will use a debit card if coins can be used?

Response: Our customer profile survey indicates that many of the consumers who have used the NYNEX debit phones at the Staten Island Ferry Terminal would continue to use it, even if coins could be used. This is not surprising since this profile group only needed to walk three more feet to use a coin phone.

Clearly, marketing programs would have to be implemented by NYNEX to effectively transition consumers to debit cards. Discounts, advertising and other promotions are needed. In addition, we believe many "second-tier" Interexchange Carriers will offer consumers 1+ tariff rates on debit card calls from these phones via 10XXX dialing. As an IXC promotion, this may save debit card users 40% or more on AT&T's retail 0+ rates. With the right incentives, many consumers in this profile group can be successfully migrated to the debit card.

Of course, you'll still have the die-hard coin user who will be insistent on using a coin phone no matter what. According to our survey, accepting this coin transaction at a Change Card Phone will not significantly impact the debit card usage rate.

The end result is that the phone maintains the critical level of transactions, and you gradually transition a large percentage of your customer base from coins to debit cards.

Issue 2: What about vandalism and fraud? If we're still accepting coins, how is your solution helping to alleviate this problem?

Response: We agree that vandalism is a problem and that our alternate approach, which includes a reduced sized coin vault, may not alleviate the incidences of vandalism in New York City. However, research indicates that vandalism still occurs at non-coinphones (stripped handsets, stuffed readers, smashed enclosures, etc.) and, as a result of the sophisticated electronics embedded in the debit phone, leads to additional theft and increased maintenance and repair costs thereby offsetting most of the "savings" from a coinless phone.

As a result of this, our proposed solution recommends that a minimum of electronics be located physically in the phone terminal, and that the phone look as close in appearance to a standard 1C2. To minimize the amount of sophisticated electronics located in the phone terminal, we have recommended that a line side Front-End Processor (FEP) be utilized to "centralize" many of the basic terminal functions within the secure confines of the Central Office. We have also suggested that a Remote Management System be utilized for the purposes running the bank, call rating, card verification, diagnostics and management reporting.

In terms of fraud, our alternative solution solves several problems not addressed in the debit card only solution. Proactive prompts for metering sent-paid local and toll calls will eliminate the problem of "walk-a-ways." A calling/credit card reader will allow those callers the option of inserting a card, thereby eliminating the problem of "Shoulder Surfers."⁷

The FEP and supporting Remote Management System (RMS) can also be utilized for verifying fraudulent debit, calling or credit cards. Serial numbers, embedded in the debit cards, can be verified during the call set-up through the RMS. This adds an additional layer of security to the cards themselves. For calling or credit cards, the FEP/RMS is capable of passing through the required validation data to LIDB and therefore can inform the RMS of inordinately high regional usage that is characteristic to fraudulent or stolen cards.

Through the utilization of the "coin in box accounting" service, the system electronically generates and dispatches a collection route for the boxes that are 85% full. This will ultimately reduce NYNEX's total coin collection costs by approximately 40%.

Issue 3: A debit card phone that looks like a standard payphone? Our debit card customers will never find it. It must stand out!

Response: These new phones can be easily differentiated in ways other than changing the physical appearance of the phone. Many LECs, including Pacific Telesis, Ameritech, Southwest Bell and GTE have multi-function paystation terminals located throughout their territories. Differentiation from a "standard" coin phone is achieved by signs, enclosures, stickers and colors.

Research indicates that non-standard looking phones result in less point-of-sale usage and higher equipment purchasing, installation and ongoing maintenance costs.

Issue 4: A combination debit, credit and calling card reader? This would significantly eat into our calling card business. A multi-card reader takes away one of our unique marketing advantages in that our calling card customers have to remember only their home phone number and a PIN. Anyway, our calling cards don't have magnetic stripes.

Response: This is true. A magnetic stripe would have to be added to your calling cards. However, we believe that this added expense will be more than offset by the reduction in consumer fraud, increased revenue from processing bank and other credit cards and new debit card transactions.

A magnetic stripe on the calling card would also solve the problem of "shoulder surfing" in that the card would be fully inserted into the reader.

Issue 5: While we believe we will make money from debit card telephone transactions, the Architecture we select must migrate into expanded lines of business.

⁷ "NYT Makes Plans to Capsize 'Shoulder Surfers'," Telephony, 7/6/92

Response: The real business NYNEX is initiating is running the bank for debit card transactions from public terminals. Because our architectural solution provides a higher level of security and fraud protection than today's ATM architecture, NYNEX can initially provide debit card payment for transactions from pay telephones. As debit cards become the money of the future, NYNEX will have already strategically positioned itself to expand into other lines of business.

NYNEX will effectively maintain the databases (banks) for terminals at toll bridges and roads, parking facilities, transit systems, vending facilities or a variety of other businesses where transactions are generally \$10 or less. Tariffed or unregulated fees would cover the costs of maintaining the databases and communication data links. Ancillary incomes would include advertising on the card and earnings from credit balances.

Issue 6: We don't believe your numbers showing an increase in additional revenues of \$1,200 per phone per year. These are wildly inflated estimates. Besides, we don't have regulatory permission to offer many of these services.

Response: Our proposed Architecture, which integrates multi-function terminals (debit card, magnetic card and coins) to a front-end processor with remote management system can generate new revenues from new and expanded lines of businesses.


Annual Revenues/savings from new services to public phones can be categorized as follows:

New LEC (regulated) revenue	\$1,061
New LEC (non-regulated) revenue	\$365
Cost Savings	\$373
New Service Fees to COPTs	\$1,313

The Appendix illustrates with summary, detailed footnotes and pie charts the sources of the revenue and cost savings from our proposed Architectural solution. Not included in these numbers are revenues from the following sources:

- Advertising revenues
- Terminal usage fees
- Credit balance revenues
- Tariffed services to COPTs

The services outlined in the Appendix, with the appropriate regulatory waivers filed, can be offered today.



Summary

In summary, we acknowledge the merits of introducing debit card technology to the public. However, its introduction in its planned limited form of a debit card only terminal represents a major risk to NYNEX's existing public payphone revenue streams.

It is for this reason that we suggest an approach that not only allows debit cards to be introduced, but captures dial-a-round and other portions of payphone revenue that currently goes to others, compels COPTs to become new customers, reduces expenses associated with current limited CO based payphone service offerings, and allows for the simple creation of future service offerings.

Since the cost of our proposed Architectural solution approximates set-based, debit only phone systems, this approach not only satisfies your debit card objectives but also those of Public Communications and the Corporation.

APPENDIX

- I. Other Service Revenue/Cost Savings Summary*
- II. Footnotes to Other Service Revenue/Cost Savings Summary*
- III. Pie Charts:*
 - Figure 1. Total Per LEC and COPT Pay Telephone Profile*
 - Figure 2. Profile of Additional Revenue Per LEC Pay Telephone Utilizing the PGP*
 - Figure 3. Potential LEC Processing Revenue for COPT Pay Telephones*
 - Figure 4. Calling Card Revenue Profile of COPT Pay Telephone*
 - Figure 5. Automated Collect Revenue Profile of COPT Pay Telephone*
 - Figure 6. Live Revenue Profile of COPT Pay Telephone*

MessagePhone, Inc. ("MPI")

Other Service Revenue/Cost Savings

MPI Payphone Gateway Platform ("PGP") Solution

Annual Revenue/Cost Savings Per Phone		
LEC's Share (1)	Other's Share	Total

New Revenue Sources

Automatic Message Delivery – A	\$108	134	242
AMEX/MasterCard/VISA at the Bong – B	8	86	94
Metered Calls (Local) – C	92		92
Metered Calls (Toll & Long Distance) – C	24	26	50
900/540/976 Unblocking – D	15	35	50
Instant Information to Live Operator – E	19	44	63
Instant Conference Calling – F	40	40	80
Total New Revenue Sources	\$306 (4)	\$365 (2)	\$671

Other Revenue/Cost Savings Sources

"0+" to "1+" Conversion (Basic BPP) – G	\$375		
"0+" to "1+" Conversion (Optional BPP) – G	133		
Total "0+" to "1+" Conversion – G	\$508	(5)	\$1,234
"0–" to "1+" Automated Conversion (Basic BPP) – H	175		
"0–" to "1+" Automated Conversion (Optional BPP) – H	89		
Total "0–" to "1+" Automated Conversion – H	264	(6)	562
"0–" to "1+" Live Conversion (Basic BPP) – H	164		
"0–" to "1+" Live Conversion (Optional BPP) – H	71		
Total "0–" to "1+" Live Conversion – H	235	(7)	365
Sent–Paid Equal Access – I	35		35
IXC Least Cost Routing – J	122		122
Universal Card Conversion – K	N/A		
Answer Detection – L	N/A		
Coin Handling/Coin in Box Accounting – M	71		71
1–0–XXX Fraud Prevention – N	N/A		
Chain Dialing – O	23		23
Coin Activity Line Monitoring – P	52		52
Per Call Compensation Accounting – Q	N/A		
Change Card Interface – R	175		175
Diagnostic Monitor and Maintenance – S	52		52
Total Other Revenue/Cost Savings Sources	\$1,537	\$2,161 (3)	\$3,698

Total All Services	\$1,843	\$2,526	\$4,369
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* A through S reference to footnotes (APPENDIX II).

- (1) "LEC's Share" represents the regulated side of the business.
- (2) Represents a line of business opportunity for the unregulated side of the business.
- (3) Represents a future line of business opportunity for the LEC which is currently restricted by the MFJ.
- (4) See Figure 2 and 3, APPENDIX III, Pie Chart.
- (5) See Figure 4, APPENDIX III, Pie Chart.
- (6) See Figure 5, APPENDIX III, Pie Chart.
- (7) See Figure 6, APPENDIX III, Pie Chart.

**MessagePhone, Inc. ("MPI")
Other Service Revenue/Cost Savings
MPI Payphone Gateway Platform ("PGP") Solution**

The following is an analysis of additional service revenue generated and maintenance feature cost savings realized upon deployment of the PGP by the Local Exchange Carrier ("LEC"). The services are categorized between "New Revenue Sources" for services not previously available and "Other Revenue/Cost Savings Sources" for existing services.

A. Automatic Message Delivery ("AMD")

The number of different type calls (coin and non-coin) as well as the revenue generated annually by each type call was developed for a typical COPT pay telephone utilizing public information published by Peoples Telephone Company, Inc. ("Peoples").

Assume 7,570 coin calls (90% local) per line annually are completed (70%) and 3,244 coin calls per line annually are incomplete (30%). A 10% AMD acceptance rate (324 calls per line) and \$.52 in gross revenue per call (cost of call plus \$.25) would generate an average of \$168 per line annually.

Annual gross coin AMD revenue per line projected to be \$168.

Assume 973 calling card, automated and live non-coin calls per line annually are completed (70%) and 417 calling card, automated and live non-coin calls per line annually are incomplete (30%). A 10% AMD acceptance rate (42 calls per line) and a fixed \$1.75 AMD charge per call would generate an average of \$74 per line annually.

Annual gross non-coin AMD revenue per line projected to be \$74.

Annual combined coin and non-coin AMD revenue per line projected to be \$242.

For AMD coin calls, the Enhanced Service Provider ("ESP") would receive \$81 (\$.25 per call) and the LEC would receive \$87 (\$.27 per call).

Assume the LEC charges the ESP \$.05 per AMD offering for non-coin incomplete calls (417 per line). Thus, the LEC would receive \$21.

LEC annual combined coin and non-coin AMD annual revenue projected to be \$108.

The ESP and long distance carrier would receive \$134 representing the difference in the \$242 of coin and non-coin gross AMD revenue and the LEC's share of \$108.

B. AMEX/MasterCard/VISA at the Bong

Presently, most callers initially attempt using a LEC or IXC card when making a long distance call. Although it will be a second harvest after the LEC and IXC cards, the PGP provides the capability to validate AMEX, MasterCard and VISA cards at the Bong. It is estimated that the 605 annual Bong calls will increase by 30 calls (5%) when this alternate billing method is provided. These additional credit card calls would generate average revenue of \$2.88 per call or \$86 per line annually.

Annual credit card call gross revenue per line projected to be \$86.

The assumption is made that the caller will pay the LEC a surcharge of \$.25 for the privilege of using these credit cards and the associated processing costs. Using the 30 additional Bong calls at a \$.25 surcharge per call would total \$8 of new revenue per line annually.

LEC annual revenue per line projected to be \$8.

C. Metered Calls

Call metering is not available for LEC pay telephone local calls without the PGP. The economic benefit would be the revenue differential gained by being able to offer this service, i.e., after 15 minutes on a local call, the LEC can require that an additional \$.25 be deposited by the caller for additional minutes. It is estimated that annual local coinage \$1,844 could be increased by 5% or \$92 in additional revenue.

LEC annual local coin revenue per line projected to be \$92.

Metering toll and long distance coin calls would prevent walkaways. Walkaways are costing the LECs approximately 25% of toll and long distance coinage. Assuming toll and long distance coinage of \$200 per line annually, then the total annual savings per line would be \$50.

Annual gross toll and long distance coin revenue per line projected to be \$50.

Assume the LEC would retain 100% of the intraLATA metered call new revenue or \$13 ($100\% \times 25\% \times \50) and 30% of the interLATA metered call new revenue or \$11 ($30\% \times 25\% \times \150).

LEC annual toll and long distance revenue per line projected to be \$24.

LEC annual combined coin and toll and long distance revenue per line projected to be \$116.

D. 900/540/976 Unblocking

Presently a caller cannot dial a 900, 540 or 976 prefix from a pay telephone. Unblocking these numbers through credit, bank or other card recognition would afford the caller access to a myriad of services and information data bases. All of these type calls are generally "high dollar" service offerings. This service should generate a minimum of \$50 in annual revenue per line.

Annual gross revenue per line projected to be \$50.

The LEC would retain approximately 30% of this new revenue or \$15 for processing.

LEC annual revenue per line projected to be \$15.

E. Instant Information to Live Operator

The PGP provides the capability to splash a call to a live operator's screen to salvage the call when the caller encounters a problem. The caller's problem could involve any number of situations such as mis-entering a credit card number, invalid credit cards, not understanding automated instructions, etc. This service should save 2% of annual non-coin long distance revenue (\$3,167) or \$63.

Annual gross revenue per line projected to be \$63.

The LEC would retain approximately 30% of this new revenue or \$19.

LEC annual revenue per line projected to be \$19 for processing.

F. Instant Conference Calling

The benefit derived from this PGP service is the additional revenue generated from being able to hook-up (connect) the caller and called party with an additional party on a conference call. Assume this service would increase coin revenue (\$2,044) by 1% or \$20. Also assume 2% of the callers would utilize conference calling on the 973 non-coin calls annually. These 20 non-coin conference calls priced at \$3 per call would generate \$60 of new revenue annually. The LEC would retain 30% of this revenue or \$20 for call set-up and processing.

Annual gross revenue per line projected to be \$80.

LEC annual revenue per line projected to be \$40.

G. "0+" to "1+" Conversion

Total revenue for the LEC generated by "processing" "0" calls is divided between Basic BPP and Optional BPP.

Basic BPP:

Currently the LEC provides billing and collection services on a wholesale basis. This tariffed services are primarily provided to AT&T, Sprint, MCI, and three major independent billing services at prices ranging from approximately \$.07 to \$.21 per individual billing. The \$.07 is charged to AT&T while the \$.21 is charged to everyone else. We are not suggesting a change in the billing structure and have used \$.18 per call for presentation purposes.

Optional BPP:

Detail accounting and processing must be performed before the CDR tape can be ready for billing. Among these numerous services for billing preparation are call duration recording, preparation of CDR tape, and sorting tape for CDRs for billing. Currently, both Sprint and MCI have made capital expenditures to perform these functions for themselves. They may or may not want to turn these procedures over to the LEC depending on whether the LEC can "beat" the \$.18 per call used in the presentation.

Second tier IXCs, independent OSPs and pay telephone companies pay anywhere from \$.18 to \$.40 per billing for these billing services. It is believed that the LEC using the low end of \$.18 will provide a competitive product to the market place.

According to People's published information, a typical COPT pay telephone completes 605 calling card calls annually. These calling card calls generate average revenue of \$2.88 per call or \$1,742 per line annually assuming an average eight minute call.

Annual calling card call gross revenue per line projected to be \$1,742.

The \$1,742 of annual revenue (\$2.88 per call) is comprised of \$508 for processing (\$.84 per call), \$581 for transport (\$.96 per call), and \$653 for profit (\$1.08 per call).

Basic BPP processing revenue amounts to \$375 (\$.62 per call) and is comprised of Bong (\$.20 per call), LIDB query for caller's PIC and validation (\$.18 per call), transport of call and billing information to IXC/OSP (\$.06 per call), and statement preparation/mailing and collection functions (\$.18 per call).

LEC annual Basic BPP processing revenue per line projected to be \$375.

Optional BPP processing revenue amounts to \$133 (\$.22 per call) and is comprised of call rating (\$.03 per call), rate table maintenance (\$.01 per call), optional billing services (call duration recording, preparation of CDR tape, and sorting tape of CDRs for billing - \$.18 per call).

LEC annual Optional BPP processing revenue per line projected to be \$133.

H. "0-" to "1+" Conversion

According to People's published information, a typical COPT pay telephone completes 213 automated calls and 155 live calls annually. Automated calls generate average revenue of \$826 per line annually (\$3.88 per call) and live calls generate average revenue of \$600 per line annually (\$3.88 per call). The \$3.88 assumes an average eight minute call.

Automated Calls:

The \$826 of annual revenue (\$3.88 per call) for automated calls is comprised of \$264 for processing (\$1.24 per call), \$230 for transport (\$1.08 per call), and \$332 for profit (\$1.56 per call).

Basic BPP processing revenue for automated calls amounts to \$175 (\$.82 per call) and is comprised of Bong (\$.20 per call), LIDB query for destination's PIC and validation (\$.18 per call), custom prompts (\$.20 per call), transport of call and billing information to IXC/OSP (\$.06 per call), and statement preparation/mailing and collection functions (\$.18 per call).

LEC annual Basic BPP automated call processing revenue per line projected to be \$175.

Optional BPP processing revenue for automated calls amounts to \$89 (\$.42 per call) and is comprised of call rating (\$.03 per call), custom prompts (\$.20 per call), rate table maintenance (\$.01 per call), optional billing services (call duration recording, preparation of CDR tape, and sorting of CDRs for billing - \$.18 per call).

LEC annual Optional BPP automated call processing revenue per line projected to be \$89.

Live Calls:

The \$600 of annual revenue (\$3.88 per call) for live calls is comprised of \$235 for processing (\$1.52 per call), \$167 for transport (\$1.08 per call), and \$198 for profit (\$1.28 per call).

Basic BPP processing revenue for live calls amounts to \$164 (\$1.06 per call) and is comprised of Bong (\$.20 per call), LIDB query for destination's PIC and validation (\$.18 per call), custom prompts (\$.20 per call), live operator (\$.24 per call), transport of call and billing information to IXC/OSP (\$.06 per call), and statement preparation/mailing and collection functions (\$.18 per call).

LEC annual Basic BPP live call processing revenue per line projected to be \$164.

Optional BPP processing revenue for live calls amounts to \$71 (\$.46 per call) and is comprised of call rating (\$.03 per call), live operator (\$.24 per call), rate table

maintenance (\$.01 per call), optional billing services (call duration recording, preparation of CDR tape, and sorting of CDRs for billing - \$.18 per call).

LEC annual Optional BPP live call processing revenue per line projected to be \$71.

I. Sent-Paid Equal Access

Coin rates include a premium over standard "1+" long distance rates. At present, all coin interLATA "1+" calls are carried by AT&T. Other long distance carriers would pay the LEC the premium over their "1+" rates to access coin traffic from pay telephones presubscribed to them. If long distance carriers would accept repayment from the LECs on what they would have charged on a standard "1+" telephone call, then the LEC could keep the coinage premium over "1+" rates. The long distance carriers would also eliminate their collection problems.

The annual coin interLATA revenue for the pay telephone is \$150. Of the \$150 total, approximately \$100 is the coinage premium over "1+" rates. However, only 35% of all pay telephones are not presubscribed to AT&T. Therefore, the annual new revenue generated would be 35% of \$100 or \$35.

LEC annual revenue per line projected to be \$35.

J. IXC Least Cost Carrier Routing

Several alternative methods are available for the LEC to provide least cost carrier routing to the caller. The alternatives include: (1) Providing a "premium" LEC card to the caller which indicates the desire for this service when the card is utilized; (2) Utilizing custom prompts to offer the service to the caller; or (3) Coupling this service with a specific bank or other credit card that indicates the caller's desire for this service when the card is utilized.

It is estimated that out of the universe of long distance callers, 20% would decline this service while 80% would accept. Of the 80% accepting, 30% would already have the cheapest rate available and 50% would be able to benefit from this service. Assuming 973 non-coin long distance calls annually and the 50% of callers who would accept the service and benefit from it equates to 487 calls annually. By charging a \$.25 premium on these 487 calls, the LEC would generate \$122 of new revenue annually.

LEC annual revenue per line projected to be \$122.

K. Universal Card Conversion

This service would be offered to the non-LEC owned pay telephone owners and is not demonstrated in this presentation.

L. Answer Detection

This service would be offered to the non-LEC owned pay telephone owners and is not demonstrated in this presentation.

M. Coin Handling/Coin In Box Accounting

This service enables the LEC to allow the premise owner, where the LEC pay telephone is located, (e.g., convenience store owner), to periodically collect the coinage. The LEC would then send the owner a bill.

Each coin collection costs the LEC approximately \$8 per collection. The average pay telephone requires approximately 19 coin box collections annually. This equates to an average collection expense of \$152 annually per pay telephone. If this service could be applied to 50% of all pay telephones, the annual savings would be \$71.

LEC annual cost savings per line projected to be \$71.

N. 1-0-XXX Fraud Prevention

This service would be offered to the non-LEC owned pay telephone owners and is not demonstrated in this presentation.

O. Chain Dialing

LEC-owned pay telephones cannot provide chain dialing. With the PGP providing this service, the LECs are able to generate revenues for Bong (\$.20) and LIDB queries (\$.18) for all chain dialed calls without incurring associated costs. Potential chain dialed calls are estimated to be 10% of annual Bong calls (605) or 61 calls annually. The cost savings of \$.38 per call for 61 calls equals \$23 annually.

LEC annual cost savings per line projected to be \$23.

P. Coin Activity Line Monitoring

This PGP service is a maintenance feature which monitors the pay telephone for conditions which would indicate it was inoperable. Such conditions would be the lack of coins going into the coin vault or rapid on/off hook flashes. Both of these conditions would indicate the telephone was not operating properly. Annual revenue generated from reduced "downtime" is estimated at 1% of annual pay telephone revenue (\$5,211) or \$52.

LEC annual cost savings per line projected to be \$52.

Q. Per Call Compensation Accounting

This service would be offered to the non-LEC owned pay telephone owners and is not demonstrated in this presentation.

R. Change Card Interface

The use of a debit card on a pay telephone would reduce fraud on "running the bank" and walkaways. It would also afford the ability to provide services to second tier long distance carriers. This service should generate a minimum cost savings of \$175 annually.

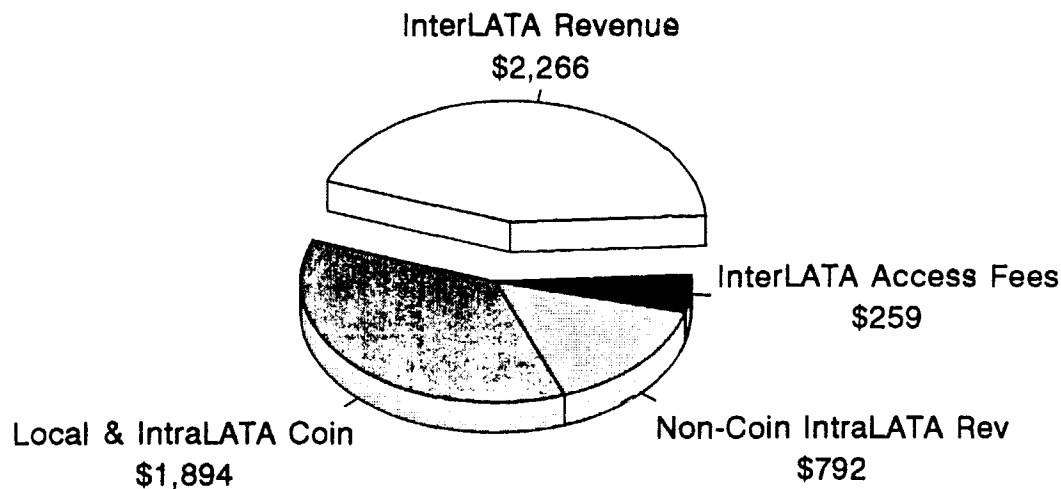
LEC annual cost savings per line projected to be \$175.

S. Diagnostic Monitor and Maintenance

This PGP applications would encompass diagnosing off-hook conditions such as a lack of dial tone, faulty key pads and other situations. Annual revenue generated from reduced "downtime" is estimated at 1% of annual pay telephone revenue (\$5,211) or \$52.

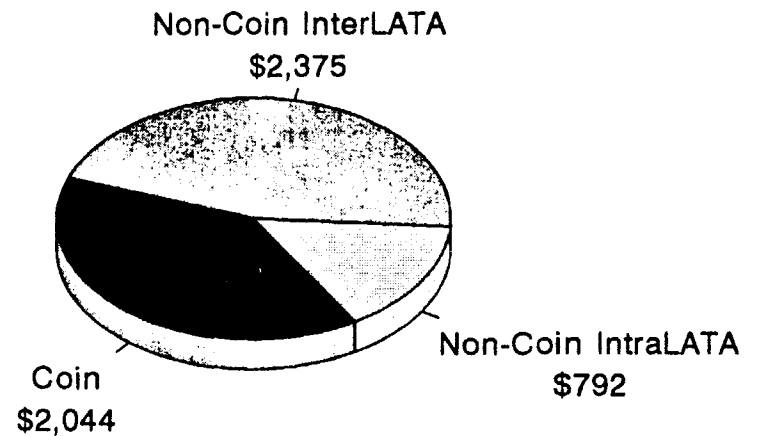
LEC annual cost savings per line projected to be \$52.

Total Revenue Per LEC Pay Telephone Profile



Revenue to LEC	\$2,945
Revenue to IXC/OSP	2,266
<hr/>	
Total Revenue	\$5,211

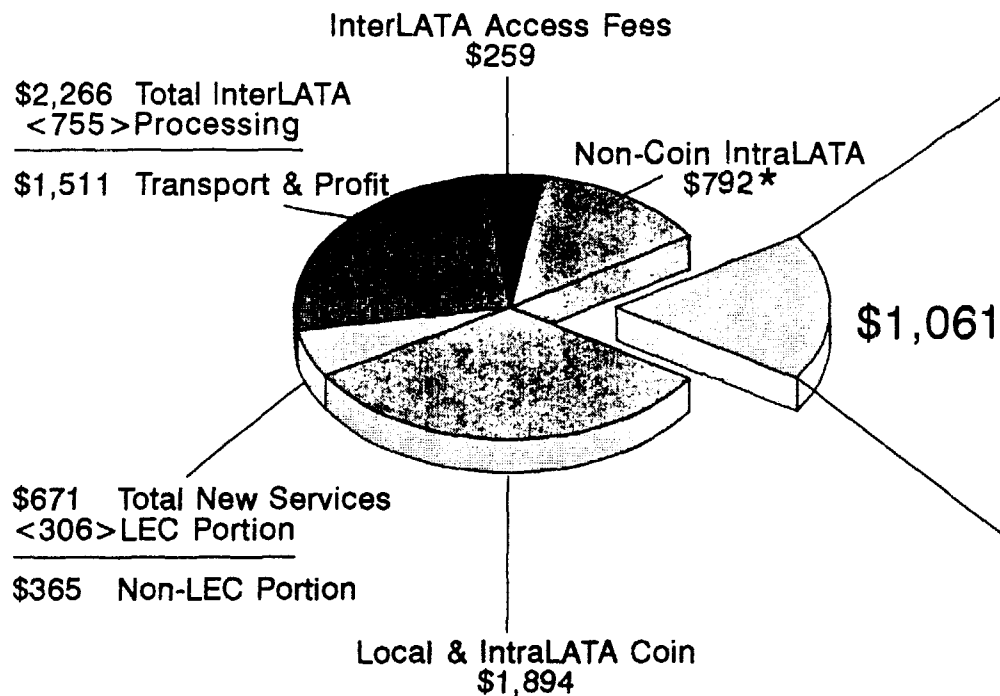
Total Revenue Per COPT Pay Telephone Profile



Revenue to COPT \$5,211

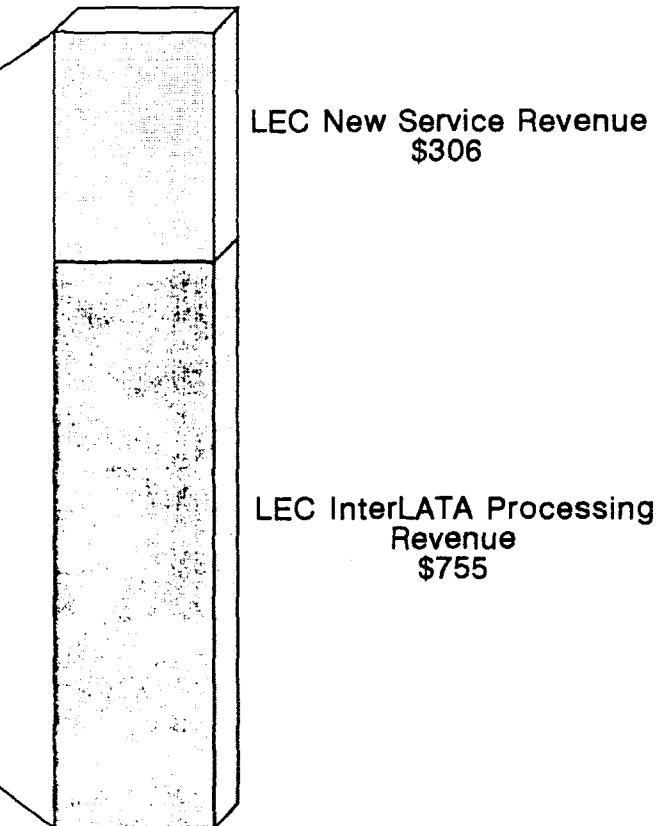
Profile of Additional Revenue Per LEC Pay Telephone Utilizing the PGP

Total LEC Pay Telephone Call (\$5,211) and New Service (\$671) Revenue



Total \$5,882

LEC "0" Call Processing and New Service Revenue



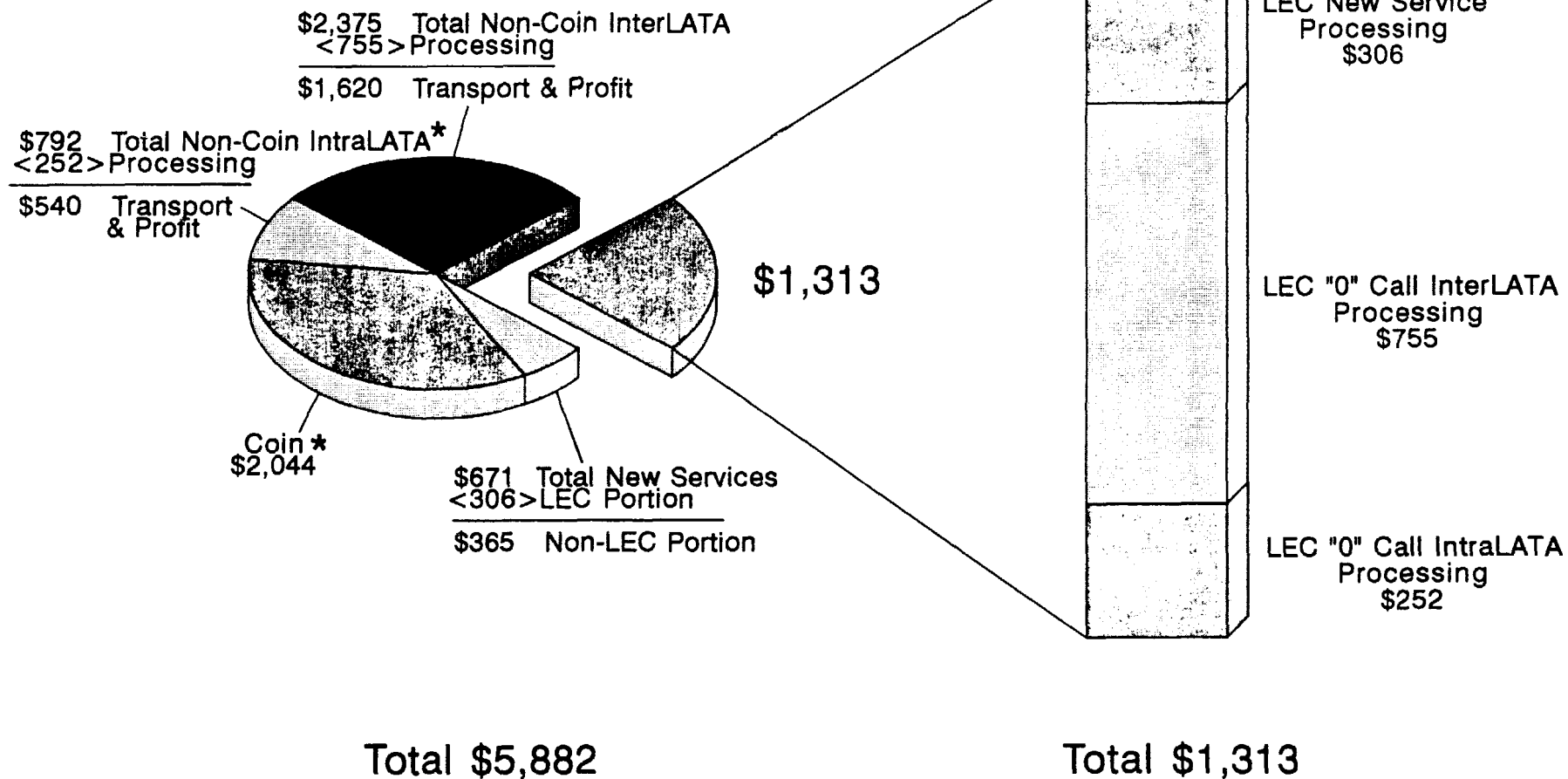
Total \$1,061

* Although the PGP is capable of processing non-coin intraLATA, this is not demonstrated in this slide.

APPENDIX III. Figure 2

Potential LEC Processing Revenue for COPT Pay Telephones

**Total COPT Pay Telephone Call (\$5,211) and New
Service (\$671) Revenue**



* LEC Transport Revenue Not Illustrated